SOLENT UNIVERSITY SOUTHAMPTON

WARSASH MARITIME ACADEMY

Redefining Seafaring Pedagogy Impacts of Virtual Reality on Seafarer Training

PROJECT TERM MAY 2017 - MAY 2018

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Thinking inside the box...

Project Short title /Acronym: WAVE 2.0 - Working in Augmented and Virtual Environments

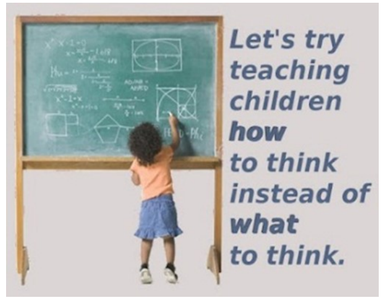
Together we will develop a virtual reality based training application that can support teaching in the commercial maritime domain, to deliver cost-effective immersive training solutions for enhanced student engagement.

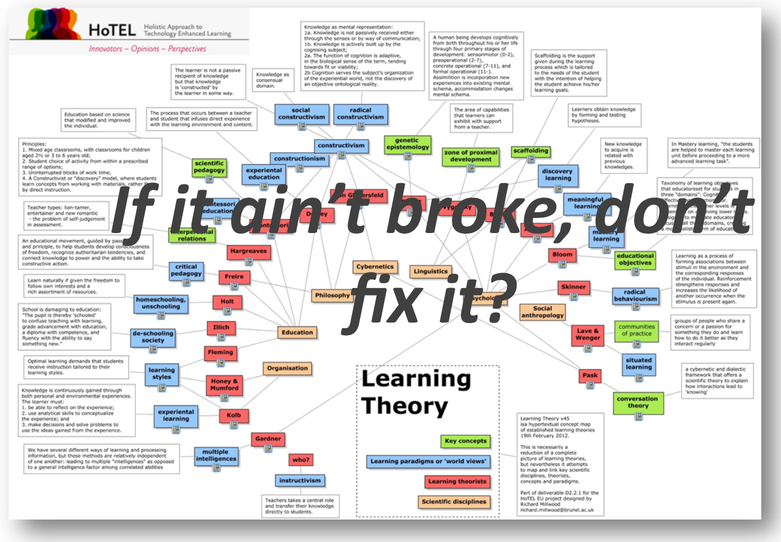
1 Approaches to data collection

This poster presents the outcome of a study investigating the transformative potential of blending virtual reality into theoretical curriculum, the setting is in commercial maritime education and training. Its potential to support meaningful learning is discussed in the 70 page report. The need to rethink and restructure the learning experience is discussed and the transformative potential of this was analysed. Finally, the impact on student learning and assessment was highlighted.

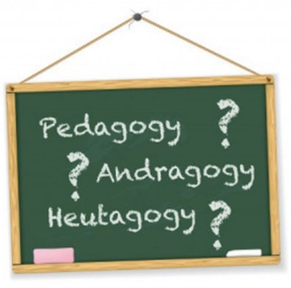
The project adopted a mixed methods approach appointing a range of case studies for data gathering and analysis. The first phase of research opened with a thematic report concerning the current knowledge around learning theories relating to the use of Virtual Reality in an educational setting. The second stage of research adopted a participatory methodology sampling responses from seafarers in training, through the introduction of systematic teaching and learning activities to teaching and learning sessions using a virtual reality application. Running from May 2017 to May 2018 the following areas were examined. Task performance assessment and feedback, developing student engagement learning criteria and understanding the learner journey.

Where to now?





If it ain't broke, don't fix it?



2 The research contribution

The conclusion found that memory retention can be significantly increased through the blending of VR lessons and experiences. VR makes it easy to reconstruct past incidents to create learning experiences for the future. It also enables creation of realistic scenarios to address safety issues. The use of virtual reality enables the laying of solid foundations from which to increase safety and situational awareness on sea going vessels in certain scenarios. Quantitative and qualitative analysis confirmed that memorisation of process and theory could be enhanced and also revealed a number of pedagogical, technological and logistical factors that supported learning.

The project developed a prototype smartphone downloadable application used with smartphone based VR to carry out the field testing. Blending virtual reality experiences with conventional lessons has the potential to have a significant effect if the adoption of blended VR was more widely adopted into the exciting conventional maritime education and training framework. In addition, the traditional teacher centric approach was witnessed to change when using virtual learning enviroments for education, from that which tended to exist in the traditional commercial maritime classroom environment. During field testing the change in student requirements saw the expert and perhaps the sole or major information source, move to facilitator, coach, or mentor – in other words, to one who, first and foremost, provides leadership and wisdom in guiding student learning.

Finally, a toolkit / good practice guide for the introduction of synthetic teaching and learning activities was produced from which to inform practitioners engaged in seafarer pedagogical practice.

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'I am not afraid of storms as I am learning how to sail my ship.' - Louisa May Alcott